

What is claimed:

1. A flexible coupling assembly for interconnecting an output shaft and an input shaft, said flexible coupling assembly comprising:

a first hub configured to mount to the input shaft for rotation therewith;

a second hub configured to mount to the output shaft for rotation therewith;

a flexible element interconnecting said first and second hubs for transferring rotational torque between said first and second hubs while continuously compensating for axial misalignment between said first and second hubs; and

a one-way clutch operatively coupled between said coil spring and one of said first or second hubs for transferring torque in one rotational direction while allowing the output shaft to rotate relative to the input shaft.

2. A flexible coupling assembly as set forth in claim 1 wherein said flexible element is a coil spring.

3. A flexible coupling assembly as set forth in claim 2 wherein said coil spring has a rectangular cross-section.

4. A flexible coupling assembly as set forth in claim 1 wherein said assembly further comprises a first retainer disposed between said flexible element and said first hub, and a second retainer disposed between said flexible element and said second hub, said retainers each configured to limit radial deflection of said flexible element during rotation of said flexible coupling assembly.

5. A flexible coupling assembly as set forth in claim 4 wherein said first and second retainers each has a helically ramped surface that receives an end of the flexible element.

6. A flexible coupling assembly as set forth in claim 5 wherein said first retainer is ring-shaped having a generally J-shaped cross section and said second retainer is ring-shaped having a generally J-shaped cross section.

7. A flexible coupling assembly as set forth in claim 6 wherein said first retainer and said first hub cooperatively limit expansion a first portion of said flexible element and said second retainer and said second hub cooperatively limit expansion of a second portion of said flexible element.

8. A flexible coupling assembly as set forth in claim 1 wherein said assembly further comprises a second flexible element interconnecting said first and second hubs for transferring rotational torque therebetween.

9. A flexible coupling assembly as set forth in claim 8 wherein the second flexible element comprises a first disc operative connected to said first hub and a second disc operatively connected to said second hub and a wave spring extending between said first and second discs.

10. A flexible coupling assembly as set forth in claim 9 wherein said second flexible element surrounds said first flexible element.

11. A flexible coupling assembly for interconnecting an output shaft and an input shaft, said flexible coupling assembly comprising:

- a first hub configured to mount to the input shaft for rotation therewith;
- a second hub configured to mount to the output shaft for rotation therewith;
- a flexible element interconnecting said first and second hubs for transferring rotational torque between said first and second hubs while continuously compensating for axial misalignment between said first and second hubs;
- a first retainer disposed between said flexible element and said first hub; and
- a second retainer disposed between said flexible element and said second hub, said retainers each configured to limit radial deflection of said flexible element during rotation of said flexible coupling assembly.

12. A flexible coupling assembly comprising:

- a first disc,
- a second disc, and

a wave spring extending between said first and second discs.